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December 19, 2002

The Honorable Michael Powell  
Chairman  
Federal Communications Commission  
445 Twelfth Street, SW  
Washington, DC 20554

REF: WT Docket No. 96-86

Dear Mr. Chairman:

At its September, 2002, meeting at Commission headquarters, the Public Safety National Coordination Committee (NCC) reached consensus on three sets of recommendations to be forwarded to the Commission. These recommendations concern: (1) technical and administrative standards for VHF and UHF narrowband interoperability channels; (2) Commission support for the development of a nationwide Incident Command System and (3) the designation of specific 700 MHz public safety band wideband 50 kHz data channels that may be aggregated to permit use of 100 kHz and 150 kHz bandwidths. Aggregation would be prohibited on other designated wideband data channels. I am pleased to report this consensus and to forward the NCC's recommendations<sup>1</sup> with the request that they be reflected in future Commission rules.

By way of background, the Commission has designated five VHF and four UHF channel pairs for interoperability use, nationwide.<sup>2</sup> Most VHF and UHF analog FM public safety radios include the *Continuous Tone Coded Squelch System* (CTCSS) feature. When this system is in use, each radio "listens" for the CTCSS tone<sup>3</sup> transmitted by its base station, portable, or mobile radio. If that tone is present, the audio portion of the radio is activated and the user hears the communication directed to him or her. However, other transmissions on the same frequency, e.g. transmissions directed to a user employing a different CTCSS tone or transmissions lacking a CTCSS tone are not heard<sup>4</sup> -- the radio is muted or "squelched."

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<sup>1</sup> This letter supercedes a similar letter dated November 12, 2002, and incorporates revised recommendations made by the NCC Steering Committee at the NCC meeting on November 22, 2002, in Brooklyn, New York. The reasons for the revisions are set out in the cover letter transmitting this letter.

<sup>2</sup> The VHF interoperability channels are 151.1375 MHz, 154.4525 MHz, 155.7525 MHz, 158.7375 MHz and 159.4725 MHz. The UHF interoperability channels are 453/458.2125 MHz, 453/458.4625 MHz, 453/458.7125 MHz and 453/458.8625 MHz. In addition, VHF channel pair 157.250/161.850 MHz is dedicated to interoperability use in thirty-three inland VHF Public Coast areas. VHF channel pair 157.225/161.825 MHz is dedicated to interoperability use in twenty-two such areas; and VHF channel pair 157.275/161.875 MHz is dedicated to interoperability use in eleven such areas. There are also five interoperability channels in the 800 MHz public safety "NPSPAC" band (821-824 MHz/866-869 MHz).

<sup>3</sup> The "tones" are low frequency (67.0 Hz to 254.1 Hz) and sub-audible, i.e. they cannot be heard by the user of the radio. Different manufacturers' products have proprietary CTCSS names such as PL (for "Private Line") and Channel Guard. However, all such products conform to a common CTCSS standard such that one manufacturer's radio can activate the CTCSS feature of another manufacturer's radio and vice-versa. CTCSS can also be used within a public safety system for selective addressing of radios. For example, in a given radio system, the radios used by police might be activated by a 103.5 Hz tone and the radios used by firefighters by a 162.2 Hz tone.

<sup>4</sup> This does not imply that the radio is immune to interference from co-channel stations. Such stations can interfere with reception when the radio is unmuted, can prevent the radio from receiving the desired signal or, if employing the same CTCSS tone as the radio, can cause it to unmute.

In order to interoperate, VHF and UHF analog FM public safety radios operating on the VHF and UHF interoperability channels should be capable of using a known, specified, common CTCSS tone. Accordingly, to facilitate interoperability, the NCC recommends that the Commission adopt a rule establishing 156.7 Hz as the nationwide uniform UHF and VHF CTCSS tone<sup>5</sup> and that the Commission require that all analog radios that are capable of operating on the VHF or UHF interoperability channels are capable of using the 156.7 Hz CTCSS tone. However, the NCC recommends against any rule that would mandate that all communications on the VHF and UHF interoperability channels must be conducted using CTCSS tone 156.7 Hz. There may be good reason for using a different tone or tones at the scene of an incident. For example, a communications official should be able to elect use of CTCSS tones other than 156.7 Hz in order to implement selective addressing of on-scene radios.

Somewhat different interoperability considerations apply to digital operation on the VHF and UHF interoperability channels. Because there are various proprietary and incompatible digital technologies that can be used in the public safety VHF and UHF bands, digital interoperability cannot be assured without specifying a common digital standard for the VHF and UHF interoperability channels. Accordingly, to ensure that digital systems operating on the VHF and UHF interoperability channels are compatible, the NCC recommends that the Commission adopt a rule stating, in substance, that if a digital mode of operation is used on the VHF or UHF interoperability channels, it must conform to the ANSI-102/Project 25 standard. This standard currently is incorporated by reference in the rules governing the interoperability channels in the 700 MHz public safety band.<sup>6</sup>

The ANSI 102/Project 25 standard uses Network Access Codes (NAC) that are functionally similar to the CTCSS tones discussed above. Accordingly, the NCC recommends that the Commission adopt a rule establishing NAC \$293 as the nationwide uniform VHF and UHF interoperability channel for digital systems. However, the NCC recommends against the Commission mandating that all digital communication on the VHF and UHF interoperability channels must be conducted using NAC \$293. As noted above, good reason exists for the use of other codes in certain circumstances, *e.g.* communication officials may elect different codes to accomplish selective addressing of radios.

Currently, State Interoperability Executive Committees (SIECs), or similar governmental entities administer the interoperability channels in the 700 MHz public safety band.<sup>7</sup> The NCC believes that the functions performed by these entities are also critical to optimum use of all interoperability channels and suggested that the jurisdiction of these entities be extended to encompass the 800 MHz mutual aid channels and the VHF and UHF public safety interoperability channels. However, after review of this matter, I am referring it back to the NCC Steering Committee in the interest of developing a more complete record on how this extended jurisdiction would work in practice.

The NCC believes that lack of a nationally accepted Incident Command System (ICS) undercuts the functionality of the channels that the Commission has designated for

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<sup>5</sup> The 156.7 Hz tone was selected as a nationwide standard in the NPSPAC Final Report. Its use is required when CTCSS tones are employed on the 800 MHz mutual aid channels. *See* Nebraska Region Public Safety Plan, GEN Docket No. 89-608, *Order*, 5 FCC Rcd. 2457 (1990).

<sup>6</sup> *See* 47 C.F.R. § 90.548.

<sup>7</sup> Most states have formed SIECs or their functional equivalents. In states that have elected not to form an SIEC or equivalent, the responsibility for administering the 700 MHz interoperability channels falls to the 700 MHz Regional Planning Committee(s) that include a given state within their boundaries. *See* 700 MHz Public Safety Band – Announcement of Updates of Interoperability Spectrum Administration Decisions, WT Docket 96-86, *Public Notice*, DA 02-2142, rel. Sept. 5, 2002.

interoperability use. Accordingly, the NCC encourages the Commission to voice its support for development of such an ICS.

The NCC has been working with the Telecommunications Industries Association (TIA) to develop a standard for the 700 MHz wideband data interoperability channels. TIA has chosen the Scalable Adaptive Modulation (SAM) technology and is in the process of developing a final suite of open standards for that technology. Based on the periodic reports given to the NCC by TIA, the NCC endorses the choice of the SAM standard. However, although the technology has been chosen by TIA, TIA has not completed work on all of the documents necessary to define the standard. An NCC recommendation for a wideband data interoperability standard will be made at the conclusion of TIA's work. However, the NCC now knows, based on TIA's work to date, that 50 kHz is the nominal channel bandwidth for the SAM system. That bandwidth can be accommodated on the wideband data interoperability channels currently in the Rules.<sup>8</sup> However, the NCC envisions that certain applications may require wider bandwidth, up to the 150 kHz limit imposed by the Rules.<sup>9</sup> Accordingly, the NCC recommends that the Commission adopt rules which permit specified multiple wideband data interoperability channels to be aggregated to derive 100 kHz and 150 kHz bandwidths; but that such aggregated use of channels be secondary to systems using 50 kHz bandwidth. Specifically, the NCC recommends that aggregation (up to 150 kHz) be permitted on all but the following channels, which should be restricted to 50 kHz-only operation: Channels 46, 47, 48, 73, 74 and 75. Channels 46, 48, 73 and 75 should be designated as 50 kHz-only nationwide common channels. The wideband data interoperability channels may be used on a local or regional basis according to SIEC plans. The NCC recommends that the channels, above, that cannot be aggregated should be the first channels to be included in an SIEC plan.

I am pleased to report that the NCC is nearing completion of the tasks set out in its Charter. However, as noted above, an NCC recommendation on a wideband data standard must await final action by TIA. Accordingly, it may be necessary to request a short extension of the NCC's chartered term which otherwise would expire on February 25, 2003.

Respectfully submitted,

/s/ Kathleen M. H. Wallman

Kathleen M. H. Wallman  
Chair, National Coordination Committee

Copies:  
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<sup>8</sup> See 47 C.F.R. § 90.531(c)(1).

<sup>9</sup> See 47 C.F.R. § 90.531(d)(2).